

Technical Coordination: summary and restart

D. De Gruttola
Salerno University and INFN

EEE general meeting

January 27th 2021



Overview

- Material requests

- Pending items (wrt last update in May 2020)

- Gas mixers
- T and p monitoring
- Cables for new FEA cards
- Trigger cards
- HV boxes and new power supply

- Gas

- Hardware e-log

Legend:

solved/defined/good shape

to be defined/pending

problematic

Material request

Progetto Extreme Energy Events - La Scienza nelle Scuole
EEE MONITOR - DQM
 [Official address: <http://www.centrofermi.it/fermi/eee>]
 Ultimo aggiornamento: ore 20:07 - sabato 12 gennaio 2019 [by @Cicolini]

[EEE Monitor] RUN 5: October 15, 2018 - May 31, 2019
 [EEE Monitor] RUN 5 - Data Taking - Day number: 90
 Total number of candidate tracks (X*2<10) in the database: 82914521849

SOICOLA ELOGBOOK for RUN 5 SHIFTERS ELOGBOOK **EEE Tech Coord**

Set Automatic Shift Report Messages Automatic Shift Report ARCHIVE

Home Page EEE Masterclass Download the EEE Sheet

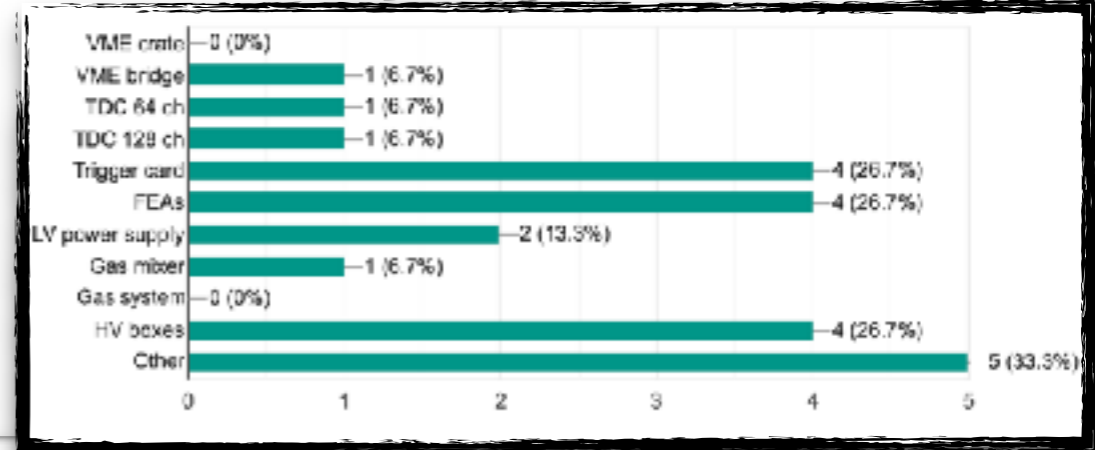
Calendario Connector Report Data Request

La tabella qui sotto mostra la situazione dei telescopi in acquisizione in EEE monitorati in tempo reale e costantemente aggiornata con i componenti di acquisizione separabili nell'ultimo run analizzato. In giallo sono indicati i telescopi in cui l'installazione o l'equilibratura sono ancora degli 813 e in verde sono indicati i telescopi in cui l'installazione o l'equilibratura sono state completate. In rosso sono indicati i telescopi in cui l'equilibratura o l'installazione sono ancora in corso.

Rate of Rate of Triggers Tracks

Site with needed information for technical coordination

<https://sites.google.com/centrofermi.it/3etech/home>



Material request

* Required

your email address *

Your answer

Telescope ID *

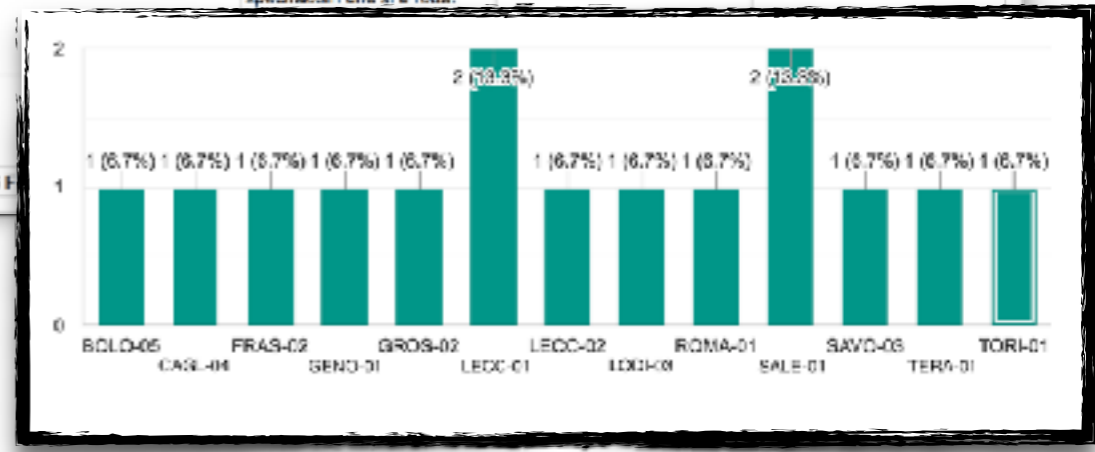
example: ALTA-01

Your answer

Request (multiple choice is possible) *

- VME crate
- VME bridge
- TDC 64 ch
- TDC 128 ch
- Trigger card
- FEAs
- Gas mixer

Timestamp	Telescope ID	Trigger card, FEAs, notes	Please specify the number of needed FEAs	Notes - please ask here the material not included in the list or other special needs	your email address	Please specify the number and the polarity of needed HV boxes
8/27/2018 11:08:23	LODI-03	Trigger card, HV boxes, notes		accettori amphenol-foa, pezzi mancanti del sistema del gas. Mancherebbe anche il sistema di alimentazione a bassa tensione che però non è disponibile. Sto guardando per un possibile sostituto e ho anche parlato con la scuola della possibilità di avere almeno degli alimentatori da banco semplici	stefano.grazzi@ge.infn.it	6 (3+3)
8/27/2018 11:09:55	GENO-01	notes		accettori amphenol-foa	stefano.grazzi@ge.infn.it	
8/27/2018 11:13:04	SAVO-03	Trigger card, notes		Sostituzione schede di trigger necessarie per sopperire alla mancanza della scheda gpa spedracom che si è rotta.		
8/28/2018 16:48:50	BOLO-05	FEAs, HV boxes				
9/6/2018 16:11:58	CAGL-04	Trigger card, FEAs, notes	6 F			



- Material requests are done via this form
- Easy tracking of requests
- Possibility to produce a summary report

Material request

- Web page to keep records

- Form for requests (smoothly used in the last years)

- Material stored at Centro Fermi

- Easy delivery
- store material at University of Salerno
- close coordination with **CREF** colleagues

- Available material

	Full set	Partial set	NOTE
AIR LIQUID GAS SYSTEM	4	2	missing parts (to replace damaged components where needed)
GAS MIXER	5		
GAS CABINET	4		2 in Salerno and 2 in Frascati
TDC 1190A	8		
TDC 1190B	10		
BRIDGE	9		
CRATE VME8004B	11		1 task force
OSCILLOSCOPES	3		mod 2024B
TRIGGER CARDS	27		27 Lecce + 4 Bologna
CLOCK CARDS	4		
HV BOX +	17		to be tested/repared
HV BOX -	15		to be tested/repared
NEW FEAs	105		

Pending items

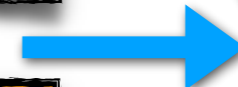
- ◆ 5 gas mixers ordered in 2019 are now available (to be delivered)
- ◆ deliver affected by lockdown rules

14/05/2020



delivered in 2020

- T and p monitoring
- new telescopes need sensors
- some old telescopes have broken sensors and need new ones
- homemade system (Raspberry)



assembling committed to schools?

- system ready (N. Mazziotta - C. Pellegrino)
- test done in Bari and Bologna → **OK**
- 12 kits available at CREF → assembling to be done

- New FEA cards → 160 cards (3 sets used)

14/05/2020

Issue with cables:

- 5 sets available but connectors are now obsolete
- Need to test a different connector: cable ready to be tested in Salerno (waiting for school opening..)

cable tested in Cariati: wrong channel ordering

good news: old connectors are actually available (new code)



Order a significant and reasonable amount

Pending items

◆ Trigger cards

14/05/2020

- *Aspek* will deliver **30 cards** in Lecce, where they will be tested (M. Panetta)



delivered
tested (OK)

◆ HV boxes

14/05/2020

- ~20 +/- boxes available at CF (possibly to be repaired)



to be checked

- Waiting news from CAEN on self-powered boxes



next slide

Pending items

New power supply 14/01/2019

- + Power supply (PS) with 3 independent channels to supply DC/DC converters – 1 channel for FEAs
- + **Remote control** with possibility to be connected via USB to the computer
- + The cost is 649 € (2 already bought and delivered to Centro Fermi)
- + **Reading voltage and currents in a separate homemade module** (N. Mozzlotto, G. Pellegrino, F. Coccetti, D. De Gruttola)



~649 €

FEATURES
• 4 Independent Isolated Output (V_{out} 0–30 V, 0–5 V, I_{out} 0–1 A, 3 x 0–3 A)
• 4 LED Display Sets : 3 Digits After Decimal Point (IPS-2303S/3303S/4303S)
• Minimum Resolution : IPS-2303S/3303S/4303S (1mV/1mA)
IPS-3303D (100mV/10mA)
• Digital Panel Control (Rotary Encoder Switch, Rubber Key With Indicator)
• User-Friendly Operation, Coarse/Fine Volume Control
• 4 Sets Save/Recall
• Key-Lock
• Output ON/OFF
• Tracking Series and Parallel Mode
• Smart Cooling Fan Achieving Low Noise
• Compact Design
• PC Software & USB Driver
• USB Standard Interface

[link to RS Datasheet](#)

- + 2 PS tested in Lodi and at Centro Fermi. OK

Saving more than 50% wrt previous solution → possibility to supply each single DC/DC polarity separately by using 2 of them

05/05/2019

D. De Gruttola (Centro Fermi Roma and Salerno INFN, Italy) - EEE general meeting

	1 pz	10	20	50
HV+	600	564	546	492
HV-	600	564	546	492

full set ~4k€ (possibly 3.5k€)



1 PS tested in Salerno (OK) available

This solution is possible but new purchase stopped to investigate self-powered HV boxes from CAEN



news from CAEN should come in February (I. Gnesi)



- 6 HV boxes (→ 21 kV)
- 6 PS for FEAs
- 1 PS 220V → 5 V (6+6 channels?)
- PC usb controller



Gas

Freon - 32 bottles at CREF → convention ends in October 2021 (possibility to extend it?)

15 telescopes need it at the moment

SF₆ - 20 (20l) bottles → purchase almost completed

12 telescopes need it at the moment

Freon - 17 bottles at INFN Bologna (delivery to be defined)

SF₆ - 7 bottles at INFN Bologna (delivery to be defined)

Leakage tests to be completed/repeated (slides from C. Cicalò, M. Garbini) → 5 digital manometers available

Scales for freon bottles → check if all schools have one

4 Air Liquid cabinets stored in Salerno and Frascati → we should move them

Closed loop system → news from I. Gnesi

Hardware e-log

- Elog page was prepared by F. Coccetti to track hardware interventions
- All items were agreed with D. De Gruttola and implemented
- Unfortunately it went lost → we will create a new one soon



- keep track of any modification in all telescopes
- help in getting information about material
- can be crucial for analysis in some cases
- once ready, this page have to be constantly used